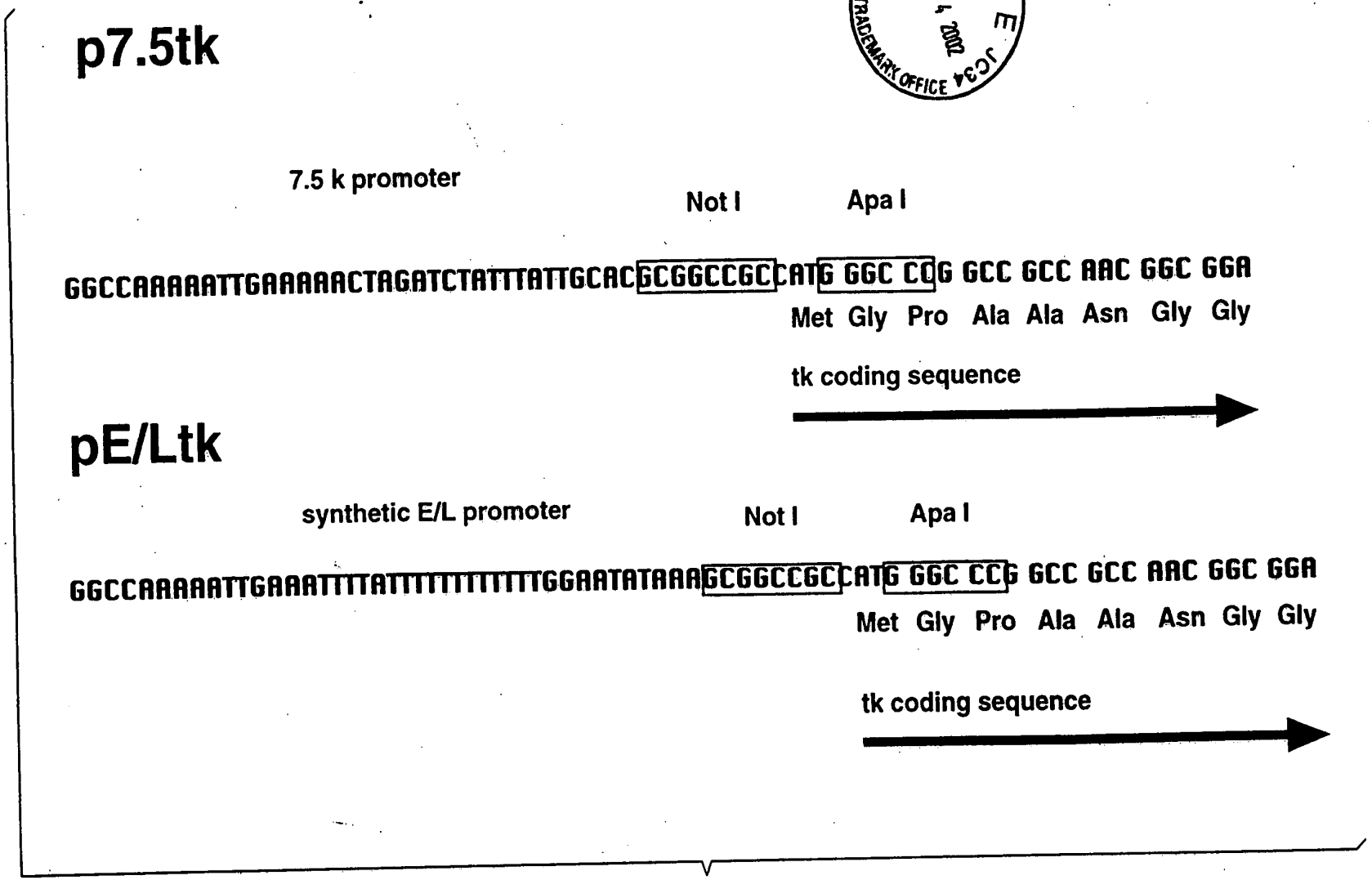


FIG. 1

Sheet 1 of 18
Appl. No. 08/935,377; Filed: September 22, 1997
Dkt. No. 1821.0010000/EKS/HCC; Group Art Unit: 1644
Inventors: Maurice ZAUDERER; Tel: 202/371-2600
Title: Methods for Selecting Polynucleotides Encoding T Cell Epitopes (as amended)

1. p7.5tk

7.5K PROMOTER NOTI APAI

5'- GGCCAAAAATTGAAAAACTAGATCTATTTATTGCACGCGGCCGCCATGGGCCCGGCC -3'

2. p7.5/ATG0/tk

7.5K PROMOTER NOTI BAMHI SMAI PSTI

5'- GGCCAAAAATTGAAAAACTAGATCTATTTATTGCACGCGGCCGCCGTGGATCCCCCGGGCTGCAGGAA

TRANSLATION TRANSCRIPTION

SALI STOP CODONS STOP SIGNAL

TTCGATATCAAGCTTATCGATACCGTCGACCTCGAGGGGGGGCCTAACTAACTAATTTTGTTTTTGT

APAI

GGGCCCGGCC -3'

FIG. 2

Appl. No. 08/935,377; Filed: September 22, 1997
Dkt. No. 1821.0010000/EKS/HCC; Group Art Unit: 1644
Inventors: Maurice ZAUDERER; Tel: 202/371-2600
Title: Methods for Selecting Polynucleotides Encoding T Cell Epitopes (as amended)

3. p7.5/ATG1/tk

START

7.5K PROMOTER NOTI CODON BAMHI SMAI PSTI

5'- GGCCAAAAATTGAAAAACTAGATCTATTTATTGCACGCGGCCGCCATGGTGGATCCCCCGGGCTGCAGGAA

TRANSLATION TRANSCRIPTION

SALI STOP CODONS STOP SIGNAL

TTCGATATCAAGCTTATCGATACCGTCGACCTCGAGGGGGGGCCTAACTAACTAATTTTGTTTTTGT

APAI

GGGCCCGGCC -3'

FIG. 2 (cont.)

Appl. No. 08/935,377; Filed: September 22, 1997
Dkt. No. 1821.001000/EKS/HCC; Group Art Unit: 1644
Inventors: Maurice ZAUDERER; Tel: 202/371-2600
Title: Methods for Selecting Polynucleotides Encoding T Cell Epitopes (as amended)

4. p7.5/ATG2/tk

			START			
	7.5K PROMOTER	NOTI	CODON	BAMHI	SMAI	PSTI

5'- GGCCAAAAATTGAAAAACTAGATCTATTTATTGCAC**GCGGCCGCc**ATG**AGTGGATCCCCCGGGCTGCAG**GAA

		TRANSLATION	TRANSCRIPTION
	SALI	STOP CODONS	STOP SIGNAL

TTCGATATCAAGCTTATCGATACC**GTCGAC**CTCGAGGGGGGGCC**TAACTAACTAA**TTTTG**TTTTTGT**

APAI

GGGCCCGGCC -3'

FIG. 2 (cont.)

Sheet 4 of 18
Appl. No. 08/935,377; Filed: September 22, 1997
Dkt. No. 1821.001000/EKS/HCC; Group Art Unit: 1
Inventors: Maurice ZAUDERER; Tel: 202/371-2600
Title: Methods for Selecting Polynucleotides Encoding T Cell Epitopes (as amended)

5. p7.5/ATG3/tk

START

7.5K PROMOTER NOTI CODON BAMHI SMAI PSTI

5'- GGCCAAAAATTGAAAAACTAGATCTATTTATTGCACGCGGCCGCCATGACGTGGATCCCCCGGGCTGCAGGAA

TRANSLATION TRANSCRIPTION

SALI STOP CODONS STOP SIGNAL

TTCGATATCAAGCTTATCGATACCGTCGACCTCGAGGGGGGGCCTAACTAACTAATTTTGTTTTTGT

APAI

GGGCCCGGCC -3'

FIG. 2 (cont.)

Sheet 5 of 18
Appl. No. 08/935,377; Filed: September 22, 1997
Dkt. No. 1821.001000/EKS/HCC; Group Art Unit: 1644
Inventors: Maurice ZAUDERER; Tel: 202/371-2600
Title: Methods for Selecting Polynucleotides Encoding T Cell Epitopes (as amended)

Appl. No. 08/935,377; Filed: September 22, 1997
Dkt. No. 1821.0010000/EKS/HCC; Group Art Unit: 16[illegible]
Inventors: Maurice ZAUDERER; Tel: 202/371-2600
Title: Methods for Selecting Polynucleotides Encoding T Cell Epitopes (as amended)

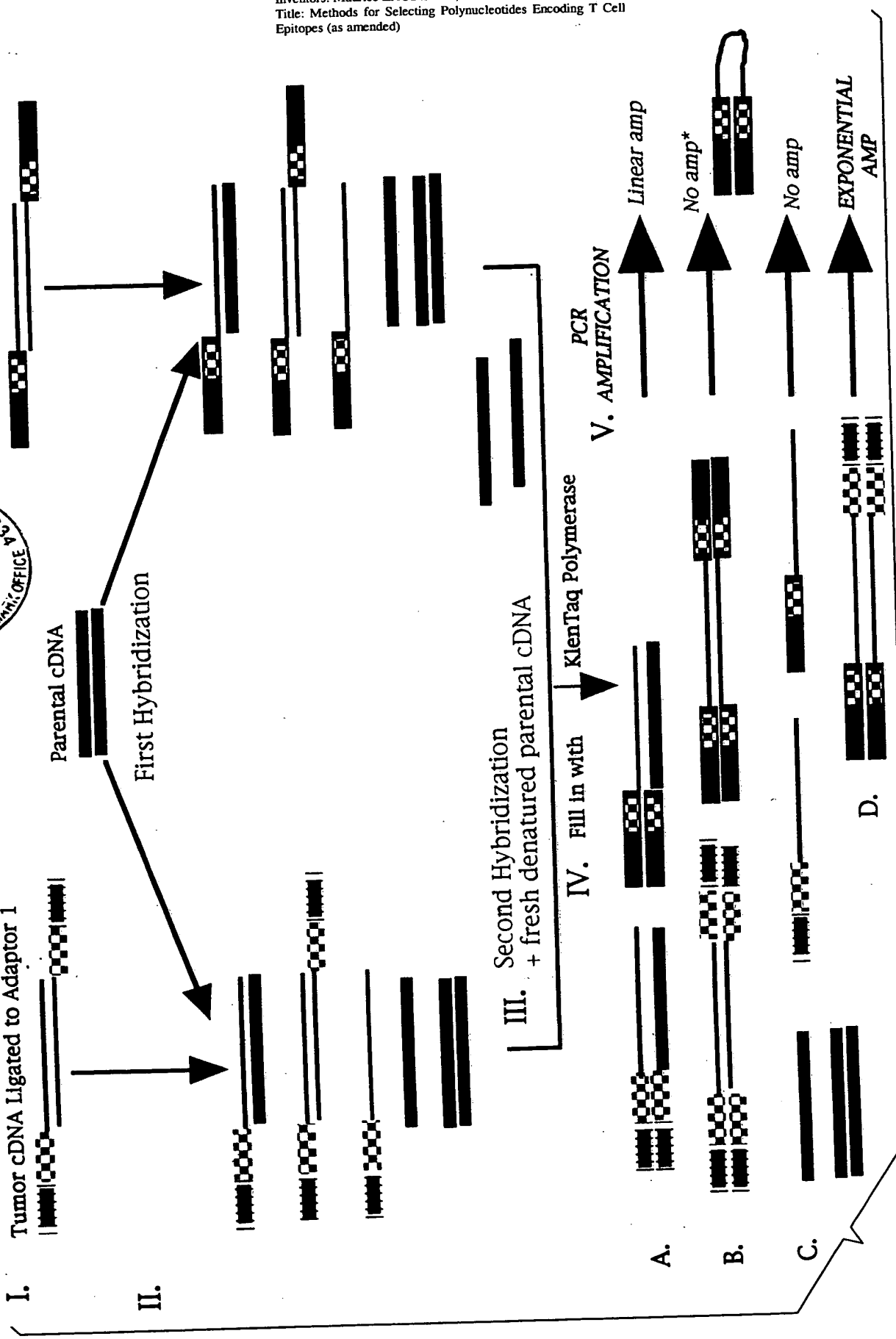


FIG. 3

Appl. No. 08/935,377; Filed: September 22, 1997
Dkt. No. 1821.0010000/EKS/HCC; Group Art Unit: 1644
Inventors: Maurice ZAUDERER; Tel: 202/371-2600
Title: Methods for Selecting Polynucleotides Encoding T Cell Epitopes (as amended)

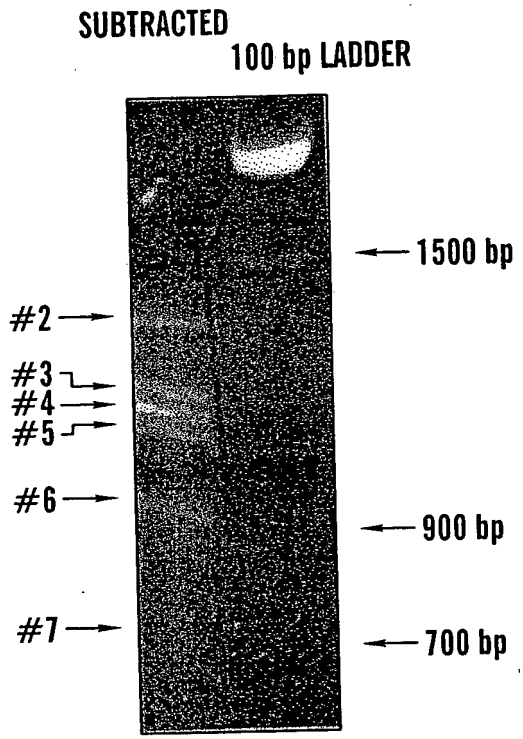


FIG. 4

Appl. No. 08/935,377; Filed: September 22, 1997
Dkt. No. 1821.0010000/EKS/HCC; Group Art Unit: 1644
Inventors: Maurice ZAUDERER; Tel: 202/371-2600
Title: Methods for Selecting Polynucleotides Encoding T Cell Epitopes (as amended)

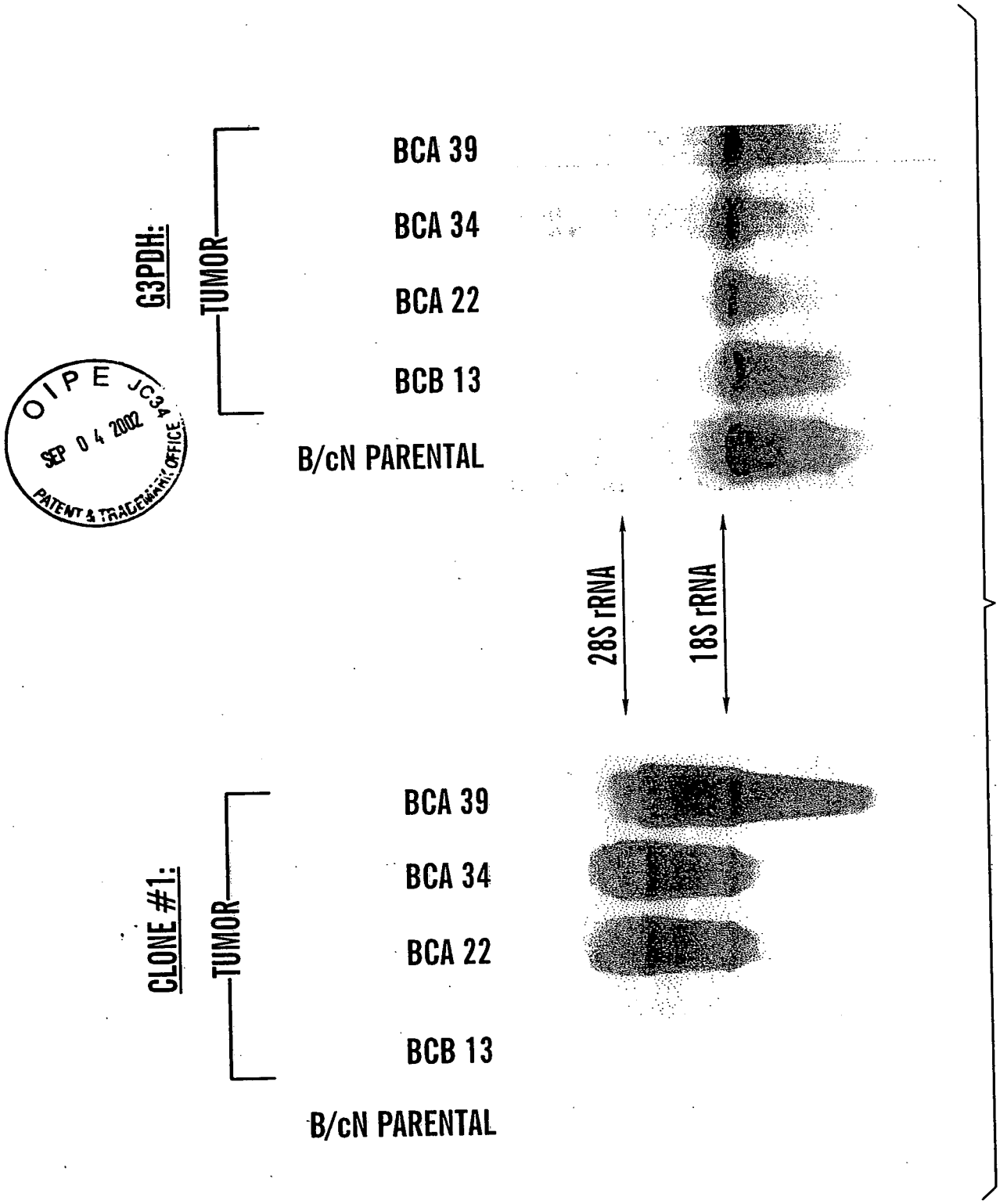
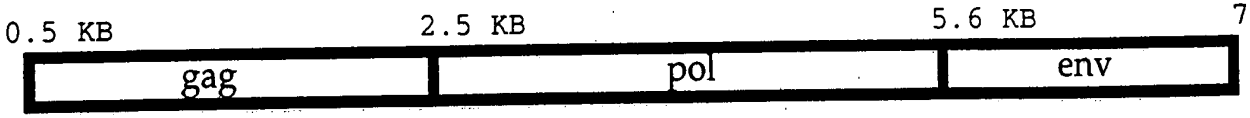


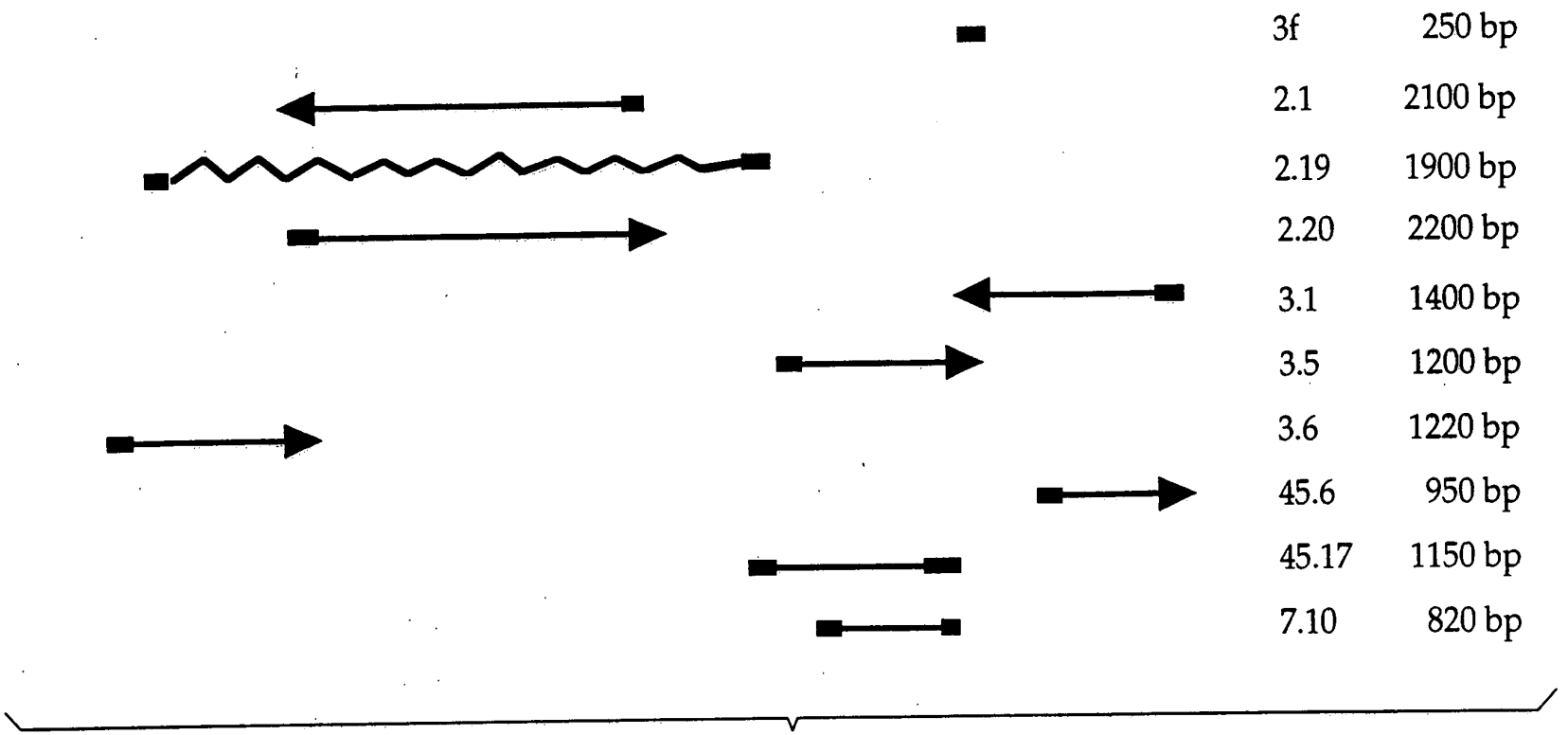
FIG. 5

= Region of the insert that has been sequenced

= Estimated region of IAP gene encoded by the insert, based on the molecular weight of the cloned RDA band

= Deletion in IAP sequence, i.e. distance between sequences from 5' and 3' ends of the insert is less than the distance homologous to the full length MIA14 sequence



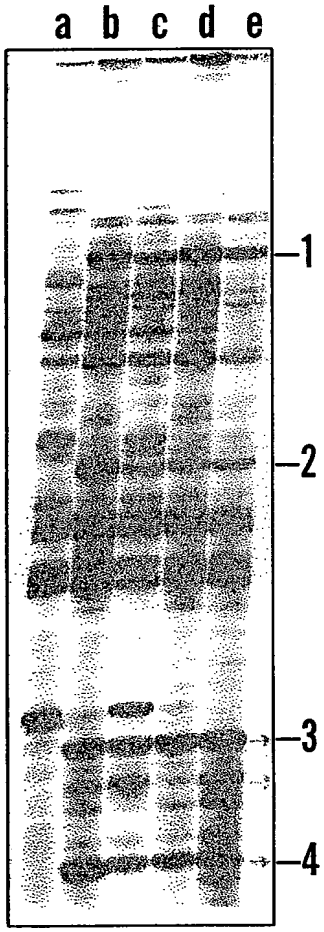


CLONE	ESTIMATED SIZE OF INSERT
3f	250 bp
2.1	2100 bp
2.19	1900 bp
2.20	2200 bp
3.1	1400 bp
3.5	1200 bp
3.6	1220 bp
45.6	950 bp
45.17	1150 bp
7.10	820 bp

FIG. 6

Appl. No. 08/935,377; Filed: September 22, 1997
Dkt. No. 1821.0010000/EKS/HCC; Group Art Unit: 1644
Inventors: Maurice ZAUDERER; Tel: 202/371-2600
Title: Methods for Selecting Polynucleotides Encoding T Cell Epitopes (as amended)

Appl. No. 08/935,377; Filed: September 22, 1997
Dkt. No. 1821.0010000/EKS/HCC; Group Art Unit: 1644
Inventors: Maurice ZAUDERER; Tel: 202/371-2600
Title: Methods for Selecting Polynucleotides Encoding T Cell Epitopes (as amended)



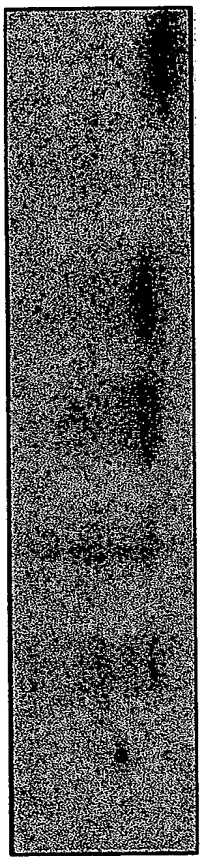
a. B/c.N
b. BCB 13
c. BCA 22
d. BCA 34
e. BCA 39

PCR amplification with primers MR_1 + MR_5.

Bands 1 to 4 are examples of differential display in tumors.

FIG. 7

Appl. No. 08/935,377; Filed: September 22, 1997
Dkt. No. 1821.0010000/EKS/HCC; Group Art Unit: 1644
Inventors: Maurice ZAUDERER; Tel: 202/371-2600
Title: Methods for Selecting Polynucleotides Encoding T Cell Epitopes (as amended)



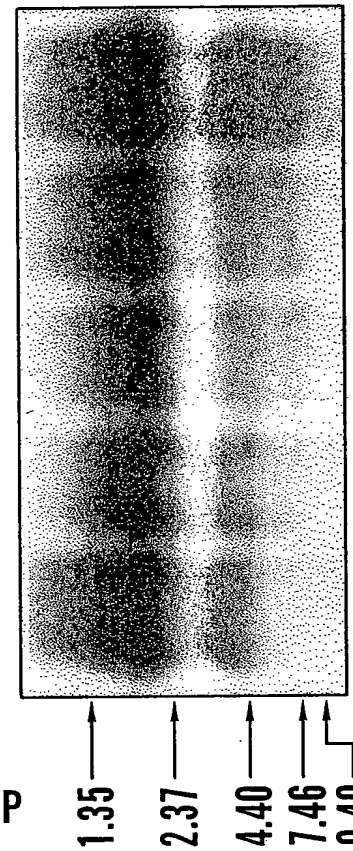


FIG. 8A

FIG. 8B

Appl. No. 08/935,377; Filed: September 22, 1997
Dkt. No. 1821.0010000/EKS/HCC; Group Art Unit: 1644
Inventors: Maurice ZAUDERER; Tel: 202/371-2600
Title: Methods for Selecting Polynucleotides Encoding T Cell Epitopes (as amended)

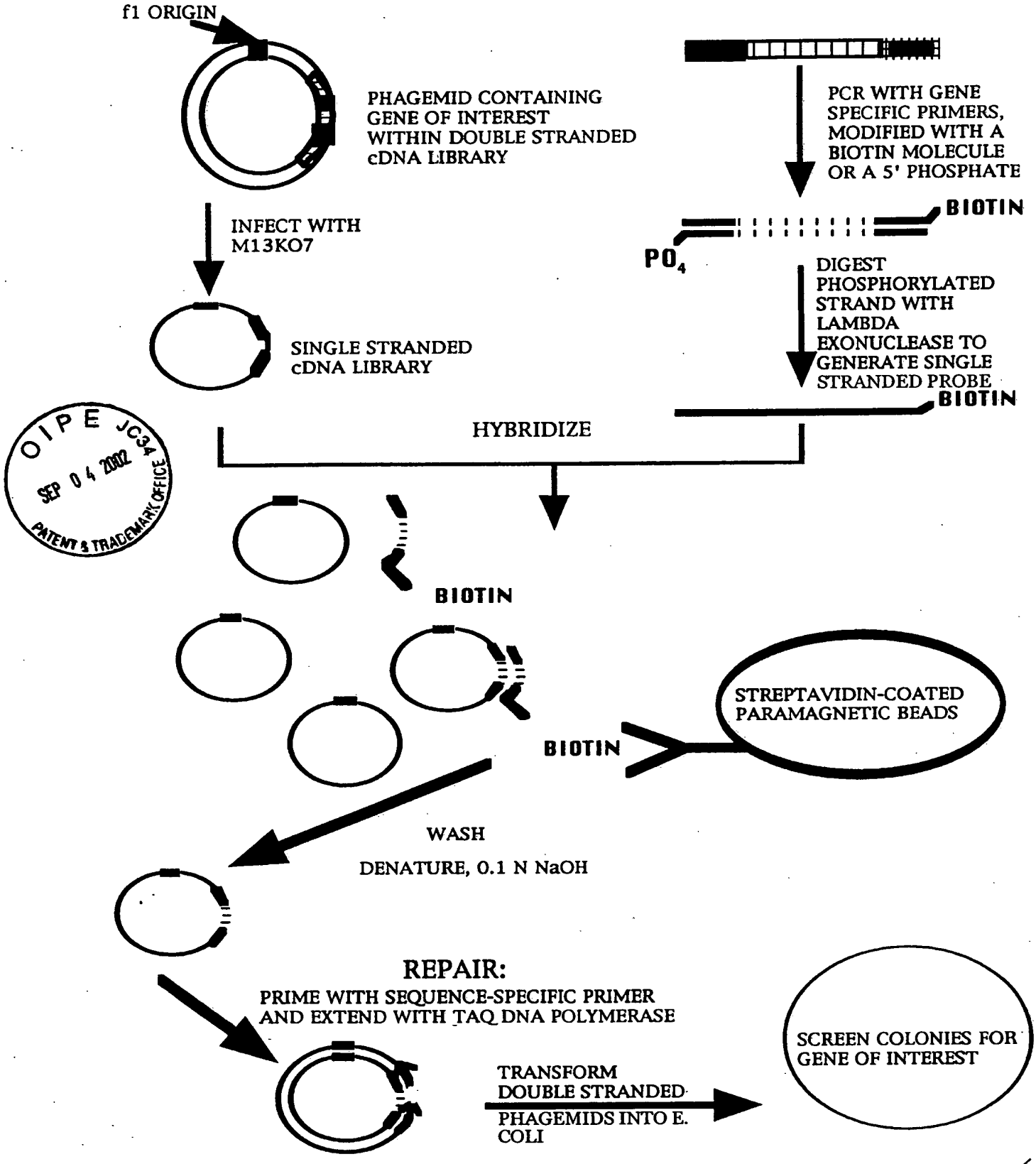
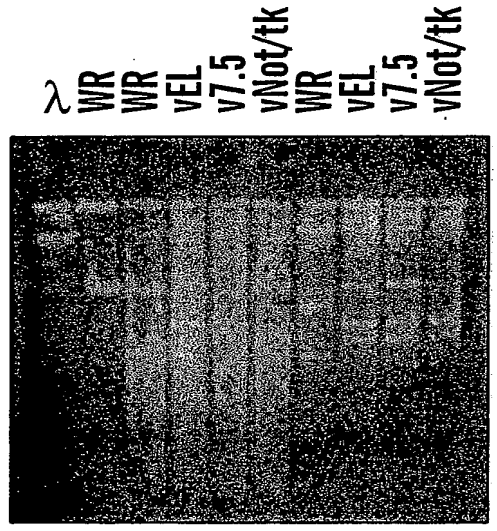


FIG. 9

Appl. No. 08/935,377; Filed: September 22, 1997
Dkt. No. 1821.0010000/EKS/HCC; Group Art Unit: 1644
Inventors: Maurice ZAUDERER; Tel: 202/371-2600
Title: Methods for Selecting Polynucleotides Encoding T Cell Epitopes (as amended)



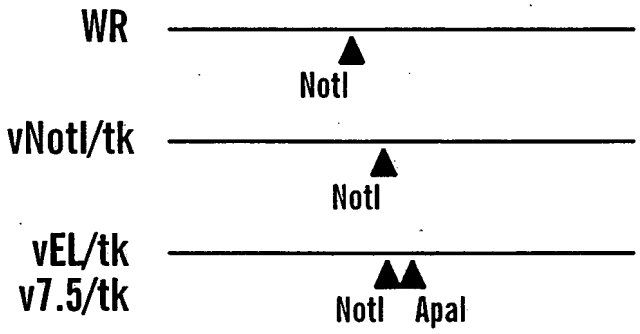


FIG. 10

Appl. No. 08/935,377; Filed: September 22, 1997
Dkt. No. 1821.0010000/EKS/HCC; Group Art Unit: 1644
Inventors: Maurice ZAUDERER; Tel: 202/371-2600
Title: Methods for Selecting Polynucleotides Encoding T Cell Epitopes (as amended)

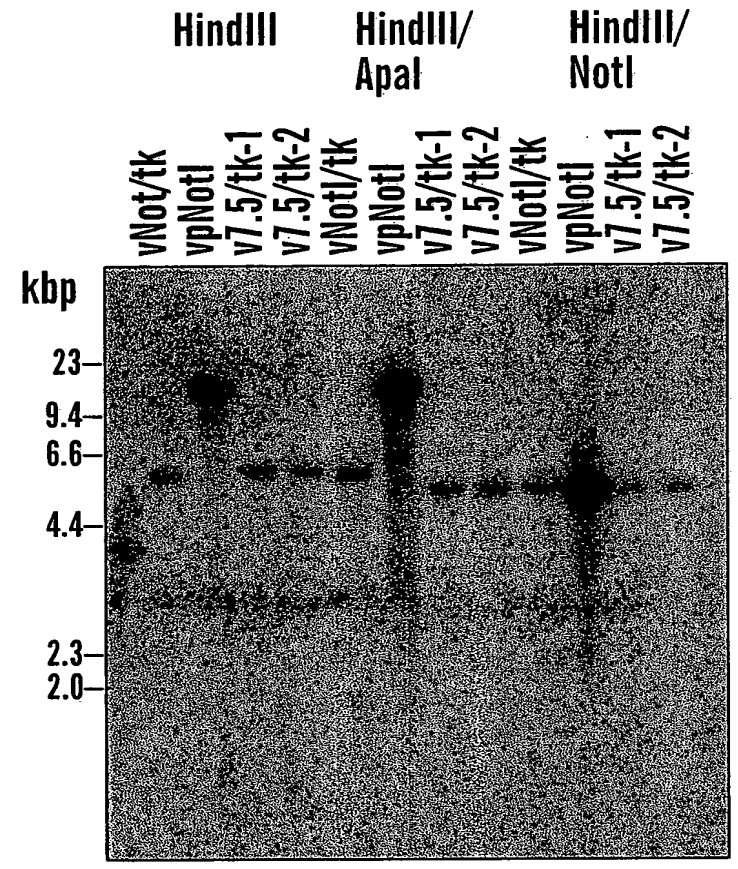
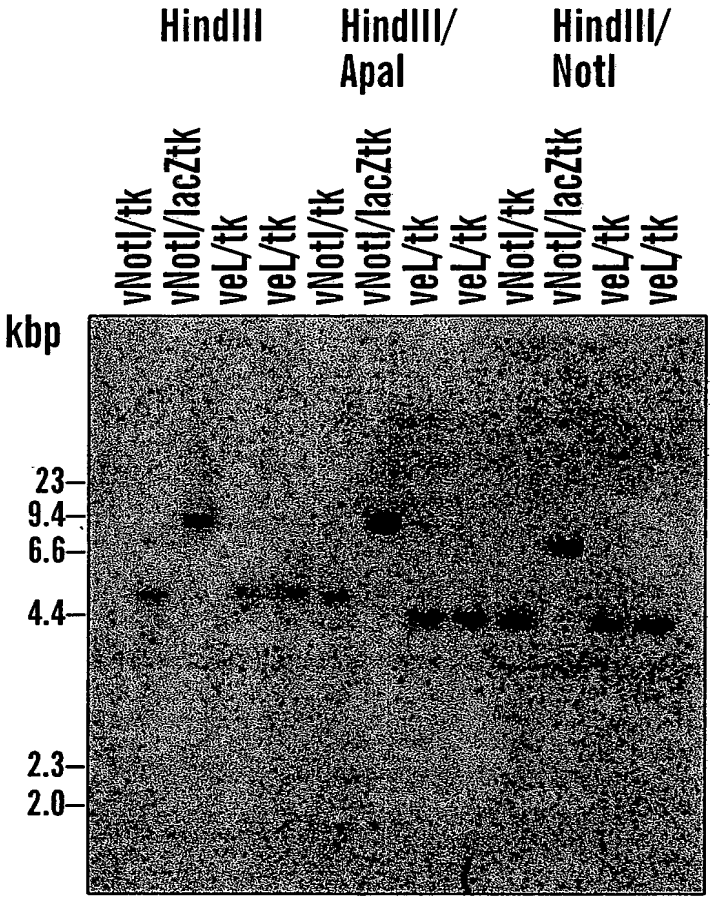


FIG. 11A

Appl. No. 08/935,377; Filed: September 22, 1997
Dkt. No. 1821.0010000/EKS/HCC; Group Art Unit: 1644
Inventors: Maurice ZAUDERER; Tel: 202/371-2600
Title: Methods for Selecting Polynucleotides Encoding T Cell Epitopes (as amended)



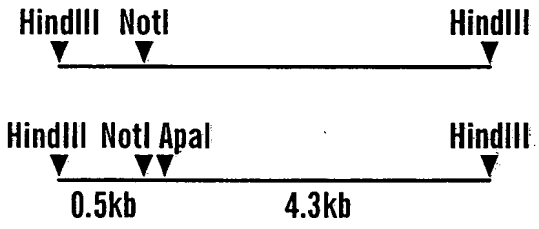


FIG. 11B

Appl. No. 08/935,377; Filed: September 22, 1997
Dkt. No. 1821.0010000/EKS/HCC; Group Art Unit: 1644
Inventors: Maurice ZAUDERER; Tel: 202/371-2600
Title: Methods for Selecting Polynucleotides Encoding T Cell Epitopes (as amended)

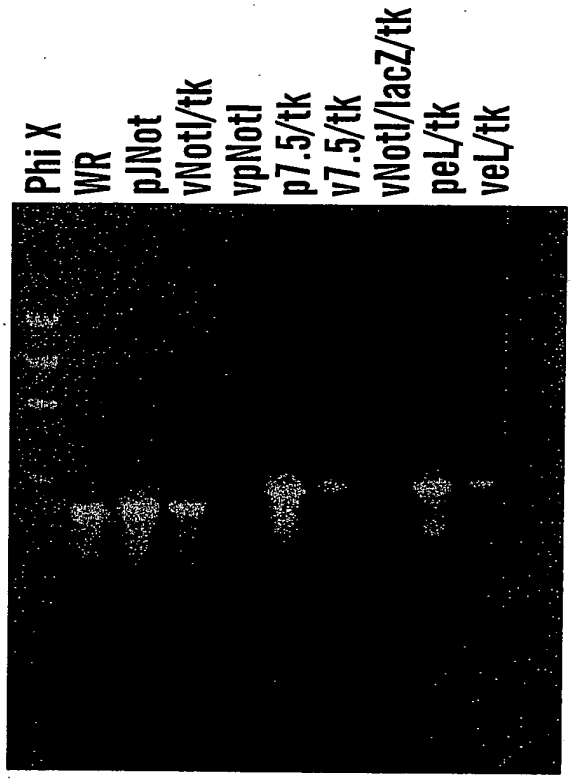


FIG. 12

Appl. No. 08/935,377; Filed: September 22, 1997
Dkt. No. 1821.0010000/EKS/HCC; Group Art Unit: 1644
Inventors: Maurice ZAUDERER; Tel: 202/371-2600
Title: Methods for Selecting Polynucleotides Encoding T Cell Epitopes (as amended)

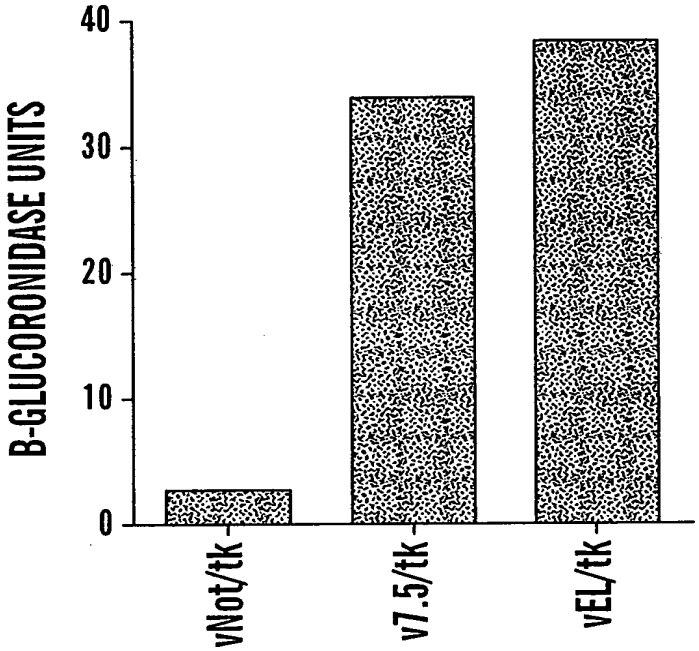


FIG. 13

Appl. No. 08/935,377; Filed: September 22, 1997
Dkt. No. 1821.0010000/EKS/HCC; Group Art Unit: 1644
Inventors: Maurice ZAUDERER; Tel: 202/371-2600
Title: Methods for Selecting Polynucleotides Encoding T Cell Epitopes (as amended)

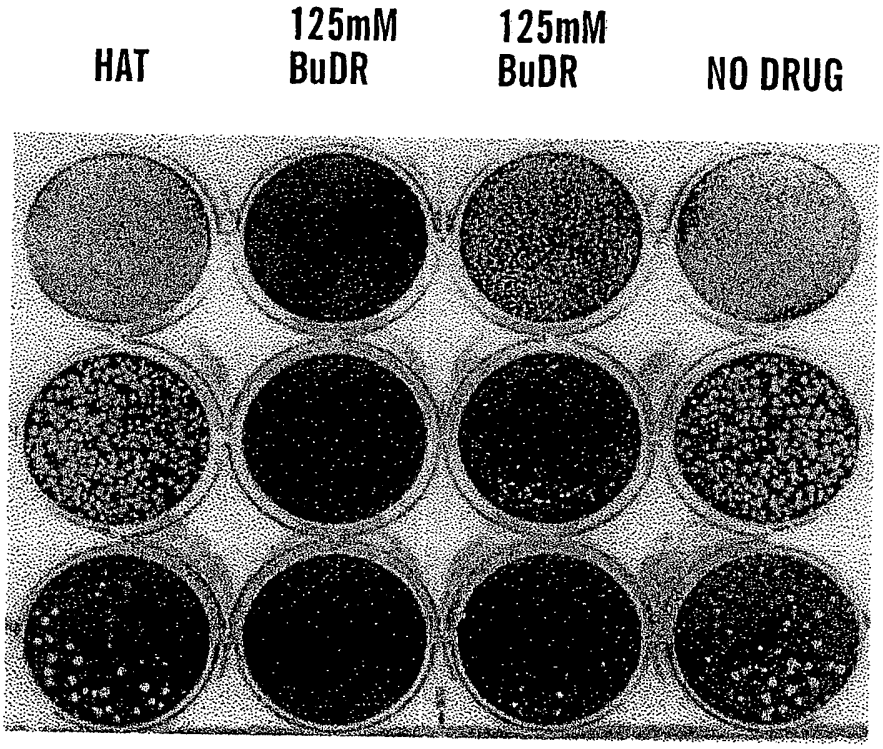


FIG. 14